

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-23 are presently active in this case. The present Amendment amends Claims 1-10 and submits new Claims 11-23.

The outstanding Office Action rejected Claims 2-4, 6, and 7 under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Korshunov et al. (SU1239535, hereinafter “the ‘535 patent”). Claims 5 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘535 patent in view of Korshunov et al. (SU1157375, hereinafter “the ‘375 patent”). Claims 9 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘535 and ‘375 patents and further in view of Nokrasov et al. (SU858429, hereinafter “the ‘429 patent”).

Initially, Applicants respectfully request that the references cited in the Information Disclosure Statement filed July 7, 2003 be acknowledged as having been considered in the next Office Action.

In response to the rejection under 35 U.S.C. § 112, second paragraph, Claim 2 is amended to correct the noted informality. In view of the instant amendment to the claims, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In response to the rejection of Claim 1 under 35 U.S.C. § 102(b), Applicants respectfully submit that Claim 1 is not anticipated by the ‘535 patent because each and every element as set forth in that claim is not found, either expressly or inherently described, in the

cited reference. In an anticipation rejection, the identical invention must be shown in as complete detail as is contained in the claim.<sup>1</sup>

Briefly recapitulating, Applicant's invention, as recited in Claim 1, relates to a method of distributing blades on a turbomachine rotor, comprising measuring the radial and *tangential* static moments of the blades, *classifying the blades in pairs* based on the measured radial and *tangential* static moments, and *mounting the selected pair of blades one by one* on the rotor in diametrically opposite positions.

The '535 patents relates to a method selecting pliable blades to be assembled on a shaft. The method includes measuring radial and axial static moments of the blades, assembling the blades with their clamps, determining a static moment difference of diametrically opposite blades, balancing the blades, and finally setting the blades on the shaft.<sup>2</sup>

Contrary to the mischaracterization of this reference in the outstanding Office Action, the '535 patent does not measure tangential static moments as recited in Claim 1. As stated in its Abstract, only radial and axial static moments of the blades and their clamps are measured in the '535 patent. Moreover, the determination of the static moment difference is made after the assembling of the blades with their clamps. On the contrary, in the present invention, the determination of the static moment difference is made before mounting the blades of each selected pair one by one in diametrically opposite positions, as explicitly recited in new dependent Claim 23.

Therefore, based at least on the foregoing reasons, the '535 patent fails to teach or suggest every feature recited in Claims 1-10 and 23, which is patentably distinct over the

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<sup>1</sup> See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

<sup>2</sup> See Abstract of the '535 patent.

cited reference. Accordingly, Applicants respectfully traverse, and request reconsideration of, the anticipation rejection based on the '535 patent.

Turning to the obviousness rejections, Applicants respectfully submit the '535, '375, and '429 patents, neither individually nor in any combination thereof, support a *prima facie* case of obviousness of the invention recited in Claim 1. This is so because, even when combined, these references do not teach or suggest all the claimed features. Claims 5, 8, 9, and 10 depend directly or indirectly from Claim 1, thus incorporating by reference all of the features recited in that claim.

The deficiencies of the '535 patent have already been discussed above. The outstanding Office Action further acknowledges that the '535 patent fails to disclose the measurement of an axial static moment of the blades and classifying the blades in pairs while taking into account the axial static moment. The '375 patent was cited for assertedly teaching an axial moment of blades and classifying them in pairs while taking into account the measured axial static moment. However, even if assuming *in arguendo* that the '375 patent teaches the asserted features, it does not remedy the above-noted deficiency of the '535 patent, as further explained next.

Similarly to the '535 patent, the '375 patent relates to a method for balancing a drive shaft based on measurements of radial and axial static moments of the blades of a shaft. The '375 patent is also silent with respect to any measurement of tangential static moments as recited in Claim 1. Furthermore, no classification in pairs or mounting of the blades in each pair in diametrically opposite positions is taught or disclosed in the '375 patent. Thus, the '375 patent does not remedy the above-noted deficiencies of the '535 patent.

In addition, as applied to the obviousness rejection of Claims 9 and 10, the outstanding Office Action acknowledges that the combination of the '535 and '375 patents fails to teach or disclose the determination of an unbalance of residual radial, tangential, an

axial static moments of the blades and the verification that this unbalance is not greater than a fourth determined value. The '429 patent was cited for assertedly teaching this feature. However, even if assuming *in arguendo* that the '429 patent teaches the asserted feature, it does not remedy the above-noted deficiency of the combination of the '535 and '375 patents, as discussed next.

The '429 patent relates to a method for balancing a turbine wheel in which the static moment of a set of blades is measured and classifying the blades, whose static moment scatter does not exceed a predetermined value, in two groups. The first group of blades is mounted in a first slot and the second group in a second slot. However, the blades are not classified in pairs and the selected pairs are not mounted in opposite positions. Thus, Applicants believe that the '429 patent does not remedy the above-noted deficiencies of the combination of the '535 and '375 patents.

Based at least on the foregoing, Applicants respectfully submit that the '535, '375, and '429 patents, neither individually nor in any combination, make obvious the invention recited in Claim 1. In addition, Claims 5, 8, 9, and 10 should be allowed, among other reasons, as depending either directly or indirectly from Claim 1, which should be allowed as just explained. For the foregoing remarks, Applicants respectfully request withdrawal of the rejection of Claims 5, 8, 9, and 10 under 35 U.S.C. § 103(a).

Finally, in order to vary the scope of protection recited in the claims, new Claims 11-23 are submitted. Non-limiting support for the new claims is self evident at least from the originally filed claims. Therefore, the new claims are not believed to raise a question of new matter.<sup>3</sup>

New independent Claim 11 recites a method of distributing blades on a turbomachine rotor, comprising: measuring radial and tangential static moments of a plurality of blades;

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<sup>3</sup> See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

Application No. 10/612,932  
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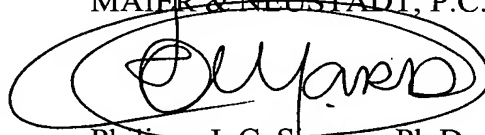
classifying the blades in the plurality in pairs according to a selection criterion based on the measured radial and tangential static moments; and thereafter mounting the blades of the selected pairs one by one on the rotor in diametrically opposite positions. New independent Claim 12 recites a method of distributing blades on a turbomachine rotor, comprising: measuring radial and tangential static moments of each blade individually; classifying the blades in pairs based on the measured radial and tangential static moments; and mounting the blades of the pairs one by one on the rotor in diametrically opposite positions. New dependent Claims 13-22 depend from new Claim 12. Based at least on the above-noted discussion, Applicants believe that new Claims 11-23 patently distinguish over the '535, '375, and '429 patents.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-23 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

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